APS/ AMP/ ALM Series
Agilis Power Supply Unit and Multiplexer

User Manual
IM02960234 Rev. A

Agilis

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Chapter 1 Product Overview

Agilis, a global leader in the design, development and manufacturing of quality satellite products for various applications, introduces the APS Series Power Supply Unit (PSU).

1.1.1 About the APS/ AMP Power Supply Unit

The AMP and APS Series Power Supply Unit is a compact, highly reliable and cost effective switching power supply used for the Agilis Block-Up Converter (BUC).

The AMP series PSU is a high quality AC to DC switching power supply with multiplexer to provide a common IFL input to the BUC. The built-in Bias-T blocks incoming DC and multiplexes DC with IF, Reference and FSK M&C signals. This PSU series comes in 3 ranges of power rating with a maximum power rating of 400W. The AMP28 series is available in both indoor and outdoor package.

The AMP and APS Series PSU go through intensive active electrical stress screening. All outdoor units undergo 100% waterproof test equivalent to IP65 to ensure normal operation in tropical, cold and harsh environments.

The following table shows the APS product model that is used for a BUC of specific frequency and power rating.

Table 1-1 APS Power Supply Selection Table

Agilis device		APS	
Frequency	Power	Indoor	Outdoor
C-BUC	10W	NA	NA
	20W to 25W	APSVAC48-300-DM	APSVAC48-300
	40W to 60W	APSVAC48-400-DM	APSVAC48-300
Ku-BUC	8W	NA	NA
	16W to 25W	APSVAC48-300-DM	APSVAC48-300
	40W	APSVAC48-400-DM	APSVAC48-300
C-Booster	25W to 50W	NA	APS20048-200-D

The following table shows the APS product model that is used for a BUC of specific frequency and power rating.

Table 1-2 AMP Power Supply with Multiplexer Selection Table

Agilis device		AMP	
Frequency	Power	Indoor	Outdoor
C-BUC	10W	AMP2801-120-DM	AMP2801-120
	20W to 25W	AMP2801-300-DM	AMP2801-300
	40W to 60W	AMP2801-400-DM	AMP2801-300
Ku-BUC	8W	AMP2801-120-DM	AMP2801-120
	16W to 25W	AMP2801-300-DM	AMP2801-300
	40W	AMP2801-400-DM	AMP2801-300

1.2 APS Product Models

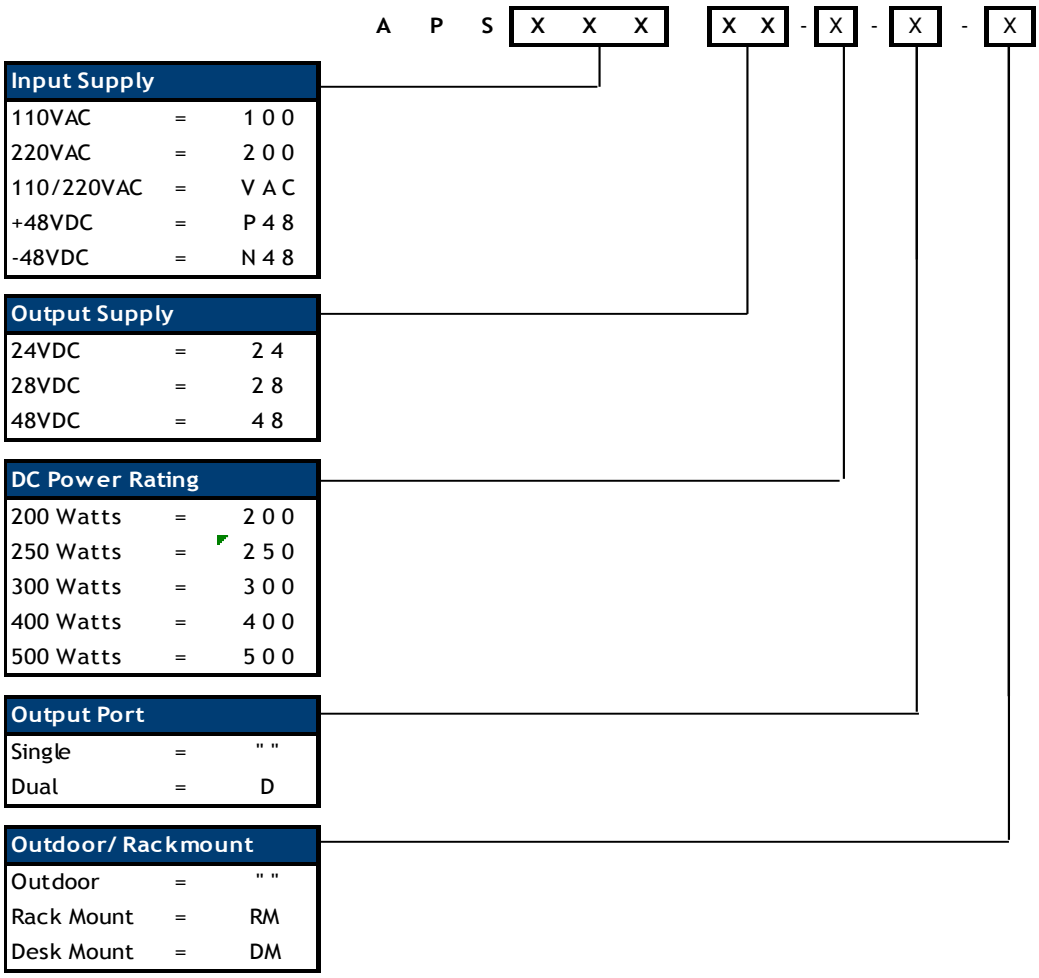
This user manual is applicable to the following APS product models:

Table 1-3 APS Series Product Models

Product Model	Description		
Outdoor	Power Rating	Input Voltage	Output Voltage
APSVAC28-300	300W	100V~240VAC	28VDC
APSVAC48-300	300W - 500W	100V~240VAC	48VDC
APS20048-200-D	200W	230VAC	48VDC Dual Output
Indoor			
APSVAC48-250-xx	250W - 450W	100V~240VAC	48VDC
APSN4824-100-RM	100W	-48V (negative DC)	24VDC

APS Part Numbering System

The following table shows the part numbering system of the APS Series Power Supply Units:


A P S X X X X X - X - X - X
Input Supply
110VAC = 1 0 0
220VAC = 2 0 0
110/220VAC = V A C
+48VDC = P 4 8
-48VDC = N 4 8
Output Supply
24VDC = 2 4
28VDC = 2 8
48VDC = 4 8
DC Power Rating
200 Watts = 2 0 0
250 Watts = 2 5 0
300 Watts = 3 0 0
400 Watts = 4 0 0
500 Watts = 5 0 0
Output Port
Single = " "
Dual = D
Outdoor/ Rackmount
Outdoor = " "
Rack Mount = RM
Desk Mount = DM

1.3 AMP28 Product Models

This user manual is applicable to the following AMP28 product models:

Table 1-4 AMP28 Series Product Models

Product Model	Description		
Indoor	Power Rating	Input Voltage	Output Voltage
AMP2801-xxx-DM	120W – 400W	90~264VAC	48VDC
Outdoor			
AMP2801-120	120W – 300W	90~264VAC	48VDC

AMP28 Part Numbering System

The following table shows the part numbering system of the AMP28 Series:

A M P 2 8 [X] [X] - [X] - [X] - [X]

Input		
L-Band, 10MHz	=	0
L-Band	=	L
No Input	=	1

Output		
L-band, 10MHz, 24VDC	=	0
L-Band, 10MHz, 48VDC	=	1
24VDC only	=	2
48VDC only	=	3
10MHz, 48VDC, 15VDC	=	4
L-Band, 50MHz	=	5
L-Band, 10MHz, 48VDC + 24VDC	=	6

Power Rating		
No DC	=	0
120W (upto 8W BUC)	=	120
200W (upto 10W BUC)	=	200
250W (upto 12W BUC)	=	250
500W (upto 25W BST)	=	500

Input Voltage		
AC 220/110 VAC	=	" "
+12VDC	=	P12
+24VDC	=	P24
+48VDC	=	P48
-48VDC	=	N48

OUTDOOR / RACKMOUNT		
Outdoor	=	" "
Desk Mount	=	DM
Rack Mount	=	RM

1.4 AMP38 Product Model

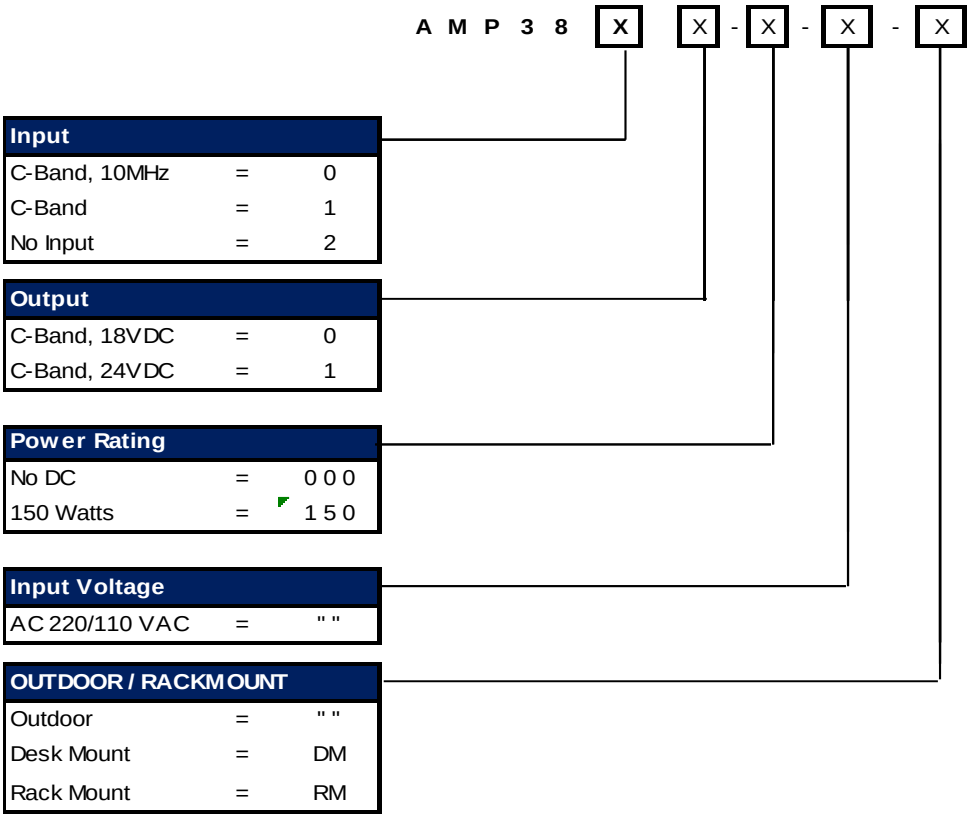
This user manual is applicable to the following AMP38 products.

Table 1-5 AMP38 Series Product Models

Product Model	Description		
Indoor	Power Rating	Input Voltage	Output Voltage
AMP3811-xxx-DM	120W	90~264VAC	24VDC

AMP38 Part Numbering System

The following table shows the part numbering system of the AMP38 Series:


A M P 3 8 X X - X - X - X
Input
C-Band, 10MHz = 0
C-Band = 1
No Input = 2
Output
C-Band, 18VDC = 0
C-Band, 24VDC = 1
Power Rating
No DC = 0 0 0
150 Watts = 1 5 0
Input Voltage
AC 220/110 VAC = " "
OUTDOOR / RACKMOUNT
Outdoor = " "
Desk Mount = DM
Rack Mount = RM

1.5 ALM28 Product Model

This user manual is applicable to the following ALM28 products.

Table 1-6 ALM28 Series Product Models

Model	Description
ALM280T4T13	Internal 10MHz multiplexer, Input -48VDC, Output +48VDC

ALM28 Part Numbering System

The following table shows the part numbering system of the ALM28 Series:

ALM28 X X X X X X X - X

Tx Band		
No Transmit (Receive Only)	=	R
L-Band (standard 1 port)	=	0
2 L-Band Tx ports	=	2
4 L-Band Tx ports	=	4
6 L-Band Tx ports	=	6
8 L-Band Tx ports	=	8
4 Input Port (SMA L-band), 1 Output Port (N L-Band + 10MHz)	=	A

Rx Band		
No Receive (Transmit Only)	=	T
L-Band (standard 1 port)	=	0
2 L-Band Rx ports	=	2
4 L-Band Rx ports	=	4
6 L-Band Rx ports	=	6
8 L-Band Rx ports	=	8

Tx DC Voltage		
No Transmit (Receive Only)	=	R
No AC or DC Input/Output	=	N
Input 220/110 Vac, Output 24 Vdc	=	0
Input 220/110 Vac, Output 48 Vdc	=	1
Input 48 Vdc, Output 24 Vdc	=	2
Input 220/110 Vac, Output 24Vdc & 48 Vdc	=	3
Input -48 Vdc, Output +48 Vdc (via external Connector)	=	4
Input 12VDC (Via external connector), No Output	=	5

Rx DC Voltage		
No receive (Transmit Only)	=	T
No AC or DC Input/Output	=	N
Input 220/110 Vac, Output 14Vdc	=	0
Input 48Vdc, Output 14Vdc	=	1
Input 220/110Vac, Output 24Vdc	=	2
Input 220/110Vac, Output 18Vdc	=	3
Input -48Vdc, Output 18Vdc	=	4

Tx/Rx Monitoring Port		
Tx & Rx Monitoring Port available	=	0
Tx & Rx Monitoring Port NOT available	=	1
Rx Monitoring Port available	=	2

10MHz OPTIONS		
Internal 10MHz & DC available		
- 10MHz external/internal selection available	=	0
- 10MHz internal only	=	2
Internal 10MHz NOT available, DC available	=	1
- 10MHz external only		
Internal 10MHz to BUC (Multiplexed through IFL)	=	3
Internal / External 10MHz selection (via external BNC connector) and External 10MHz out	=	4

Input Interface		
N-type female	=	" "
F-type female	=	F

OUTDOOR / RACKMOUNT		
Outdoor	=	" "
Rack Mount	=	RM

1.6 APS Series Power Supply Unit

The following section defines the various product models of the APS Series Power Supply Unit, both indoor and outdoor versions.

1.6.1 APS Power Supply Unit, Outdoor

The following section explains the physical interface and functions of the outdoor PSU that accepts 110V or 220VAC and provides DC voltage of 28V or 48V to Agilis devices such as BUC, SSPA, and so forth.

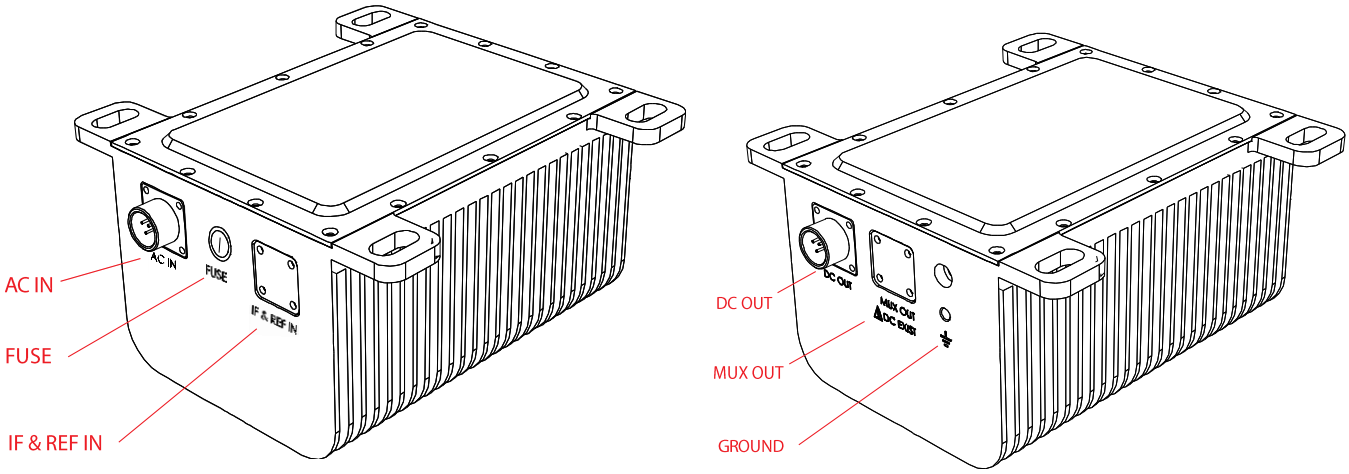


Figure 1.1 Outdoor PSU (110V/220VAC to 28V/48VDC) Front and Rear View

Table 1-7 Interface connection ports

Port	Port Description	Signal Details
AC IN	KPT02E12-3P, 3-PIN MALE	Provides AC power input (110V or 220V)
FUSE	AC Fuse holder	10Amp fuse; fuse protects the PSU from surge current
IF & REF IN	Dummy Plate	Not used
DC OUT	62IN-12E-12-12S-4, 4-PIN FEMALE	DC output (28V or 48V)
MUX OUT	Dummy plate	Not used
GROUND	Grounding	Grounding protects the PSU from a build-up of static charges

Table 1-8 PSU Specifications

Unit Specifications of Outdoor PSU, AC to DC	
Parameter	**Value**
Agilis Product Model	Outdoor PSU, AC input to DC output
Model Part Number	APSVACxx-xxx
Power Rating available	200W to 500W
AC Input Supply	
Input Voltage	220VAC (range 90V~264VAC)
Interface	KPT02E12-3P, 3-PIN Male
Pin-out Configuration	
Pin A	Earth
Pin B	Live
Pin C	Neutral
DC Output	
Output Voltage	28VDC (range 26.6V to 29.4VDC)
	48VDC (range 45.6V to 50.4VDC)
Interface	62IN-12E-12-12S-4, 4-PIN Female
Pin-out Configuration	
Pin A (With respect to Pin B)	+28VDC (for 28VDC output) +48VDC (for 48VDC output)
Pin B	-28VDC (for 28VDC output) -48VDC (for 48VDC output)
Pin C	NC
Pin D	NC
Ripple Peak to Peak	240mV max
Rated Output Current	7.3A max
Environmental Specifications	
Operating Temperature	-40°C to 60°C
Storage Temperature	-40°C to 85°C
Working Humidity	Up to 100%RH
Mechanical	
Dimensions	190mm x 128.9mm x 105mm (LxWxH)
Weight	3kg

1.6.2 APS Power Supply Unit with Dual Output, Outdoor

The following section explains the interfaces and functions of the Outdoor PSU that accepts 220VAC input and provides 48VDC to Agilis BUC, SSPA, and so forth.

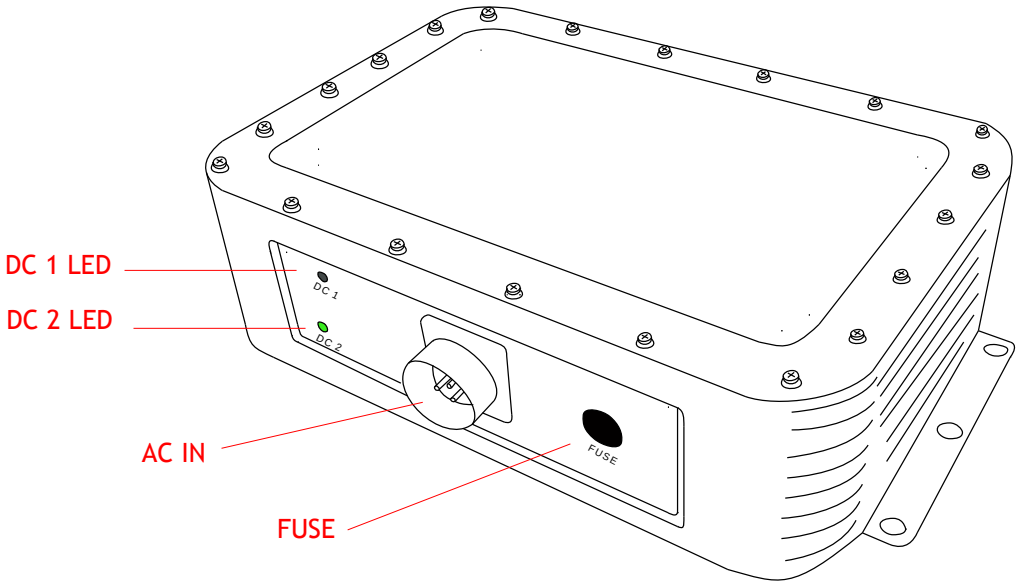


Figure 1.2 APS20048-200-D front view

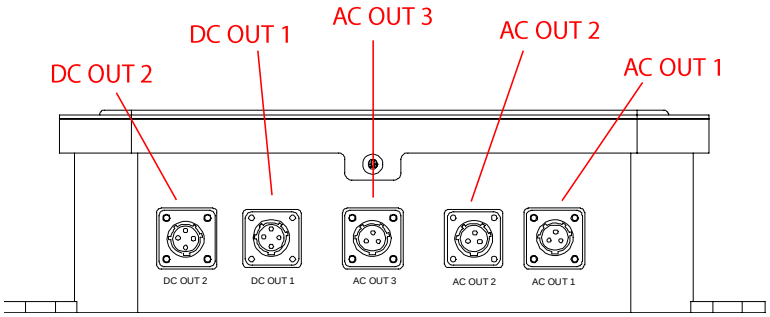


Figure 1.3 APS20048-200-D rear view

Table 1-9 Interface Connection Ports

Port	Connector Type	Signal Details
AC IN	3-pin Male Connector (KPT02E12-3P)	Input Voltage
DC 1	LED	Power Status Indicator
DC 2	LED	Power Status Indicator
FUSE	Fuse 10A, 250VAC Antisurge	Fuse
AC OUT 1	3-pin Female Connector	220VAC Output Voltage
AC OUT 2	3-pin Female Connector	220VAC Output Voltage

Port	Connector Type	Signal Details
AC OUT 3	3-pin Female Connector	220VAC Output Voltage
DC OUT 1	4-pin Female Connector (62IN-12E-12-12S-4)	48VDC Output Voltage
DC OUT 2	4-pin Female Connector (62IN-12E-12-12S-4)	48VDC Output Voltage

Table 1-10 PSU Specifications

Unit Specifications of Outdoor PSU APS20048-200-D		
Parameter	**Value**	
APS Product Model	Outdoor PSU, AC input to DC output	
Model Part Number	APS20048-200-D	
Power Rating available	200W	
AC Input		
Input Voltage	220VAC (range 220 to 250VAC)	
Interface	3-pin Male Connector (KPT02E12-3P)	
Pin-out Configuration		
Pin 1	Earth	
Pin 2	Live	
Pin 3	Neutral	
DC Output		
Output Voltage	48VDC (range 45.6 to 50.4VDC)	
Interface	4-pin Female Connector (62IN-12E-12-12S-4)	
Pin-out Configuration		
Pin A	+VDC	
Pin B	-VDC	
Pin C	NC	
Pin D	NC	
AC Output		
Output Voltage	220VAC	
Interface	3-pin Female Connector	
Pin-out Configuration		
Pin 1	Earth	
Pin 2	Live	
Pin 3	Neutral	
LED Status Indications		
DC	Green	Normal operations
	Off	PSU is off

1.6.3 APS Power Supply Unit, Indoor

The following section explains the physical interface and functions of the indoor Agilis power supply units that accepts AC input and provides a DC voltage output of 48V.

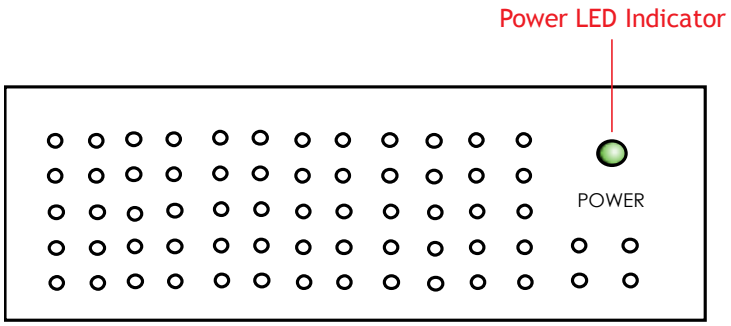


Figure 1.4 Indoor PSU front view

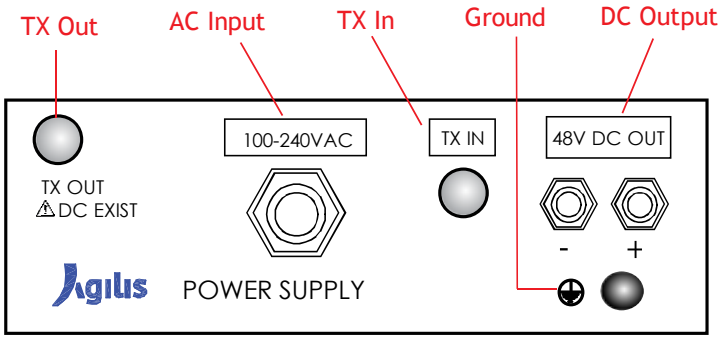


Figure 1.5 Indoor PSU rear view

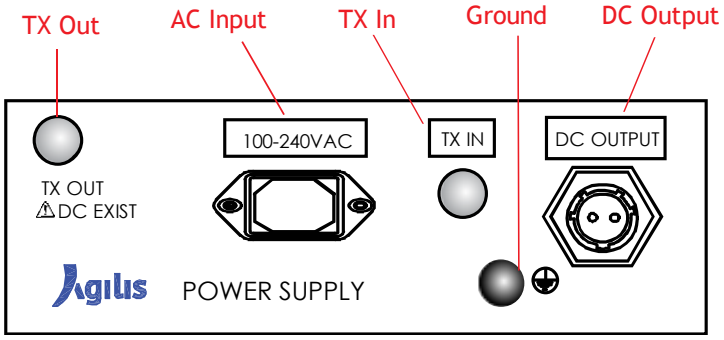


Figure 1.6 Indoor PSU rear view (APSVAC48-450-DM model only)

Table 1-11 PSU Specifications

Unit Specifications of Indoor PSU, AC to 48VDC		
Parameter	**Value**	
APS Product Description	Indoor PSU, AC input to DC output	
Model Part Number	APSVAC48-xxx-RM (Rack Mount) APSVAC48-xxx-DM (Desk Mount)	
Power Rating available	250W to 400W	
AC Input		
AC Input Power	220VAC (range 100V to 264V)	
Interface (450W-DM model)	3-pin Male Connector	
Pin-out configuration	Pin 1	Earth
	Pin 2	Live
	Pin 3	Neutral
Interface (for Desk Mount)	3-core power cable	
Pin-out configuration	Pin 1	Green/ Yellow
	Pin 2	Brown
	Pin 3	Blue
Power Factor	0.93 (230VAC at Full Load)	
Power Factor	0.96 (115VAC at Full Load)	
DC Output		
DC Output Power	+48VDC (range 45.6V to 50.4V)	
Interface (for Desk Mount)	Binding Post	
Pin-out configuration	Red	+48VDC
	Black	-48VDC
Interface (450W-DM and 300W-RM models)	97B-3100A10SL-4S-SL	
Pin-out configuration	Pin A	+48VDC
	Pin B	-48VDC
Ripple Peak-to-Peak	150mV max (for 300W) 240mV max (for 400W)	
Rated Output Current	6.25A max (for 300W-DM) 6.75A max (for 300W-RM) 8.5A max (for 400W-DM)	
LED Status Indications		
Power LED	Steady Green	PSU normal operations
	Off	PSU is off
Environmental Specifications		
Operating Temperature	0°C to 50°C	
Storage Temperature	-10°C to 60°C	
Relative Humidity	20 to 90% RH	

Unit Specifications of Indoor PSU, AC to 48VDC	
Mechanical	
Dimensions (L x W x H) mm	295 x 140 x 56 (Desk Mount) 432.6 x 190 x 42 (Rack Mount)
Weight (kg)	1.7 (Desk Mount) 2.2 (Rack Mount)

Table 1-12 Interface Connection Ports

Port	Connector Type	Signal Details
100-240VAC	3-core power cable OR 3-pin Male Connector (450W-DM model only)	110V/220V AC Input Voltage
DC Output/ 48VDC Out	Binding Post OR 97B-3100A10SL-4S-SL (450W-DM model only)	+48VDC Output Voltage
Power	LED	Status Indicator
TX In	Dummy Plate	Not used
TX Out	Dummy Plate	Not used
Ground	Grounding	Protects against static charges

1.6.4 APS Power Supply with +48VDC input to 24VDC output

This section explains the interfaces and functions of the indoor Agilis Power Supply Unit that accepts 48VDC and provides a DC output of 24V.

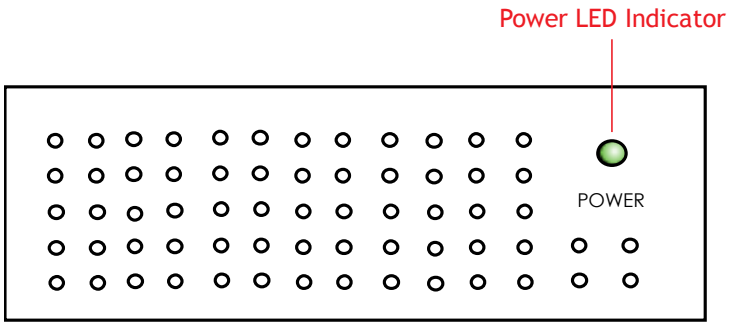


Figure 1.7 Indoor PSU front view

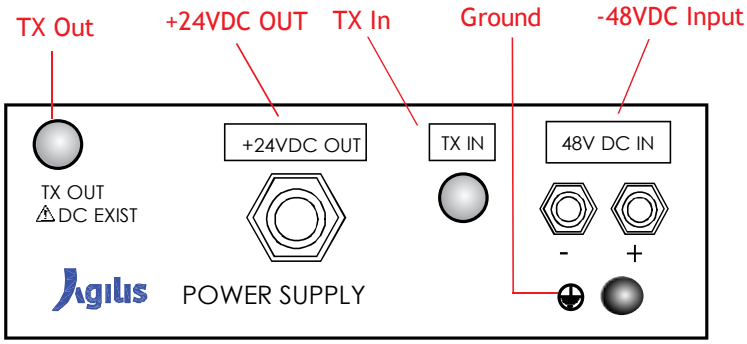


Figure 1.8 Indoor PSU Desk Mount rear view

Table 1-13 PSU Specificaitions

Unit Specifications of APSN4824-100-RM		
Parameter	Value	
APS Product Description	Indoor PSU, DC Input to DC output	
Model Part Number	APSN4824-100-RM	
Power Rating available	100W	
DC Input		
DC Input Power	48VDC (range 36V to 72VDC)	
Interface	Binding Post	
Pin-out configuration	Red	Positive
	Black	Negative
DC Output		
DC Output Power	24VDC (range 22.8V to 2.2VDC)	
Interface	Power Plug KPPX-4P	

Unit Specifications of APSN4824-100-RM	
Ripple Peak-to-Peak	150mV max
Rated Power	100W max
Environmental Specifications	
Operating Temperature	0°C to 50°C
Storage Temperature	-10°C to 60°C
Working Humidity (non-condensing)	20 to 90 %RH
Mechanical	
Dimensions (including connectors)	315 x 140 x 56 mm
Weight	1.2kg

Table 1-14 Interface Connection Ports

Port	Connector Type	Signal Details
48V DC In	Power Plug KPPX-4P	-48V DC input voltage
24V DC Out	Binding Post	+24V DC output voltage
Power	LED	Status Indicator
TX In	Dummy Plate	Not used
TX Out	Dummy Plate	Not used
Ground	Grounding	Protects against static charges

1.7 AMP28 Series L-band Multiplexer/PSU

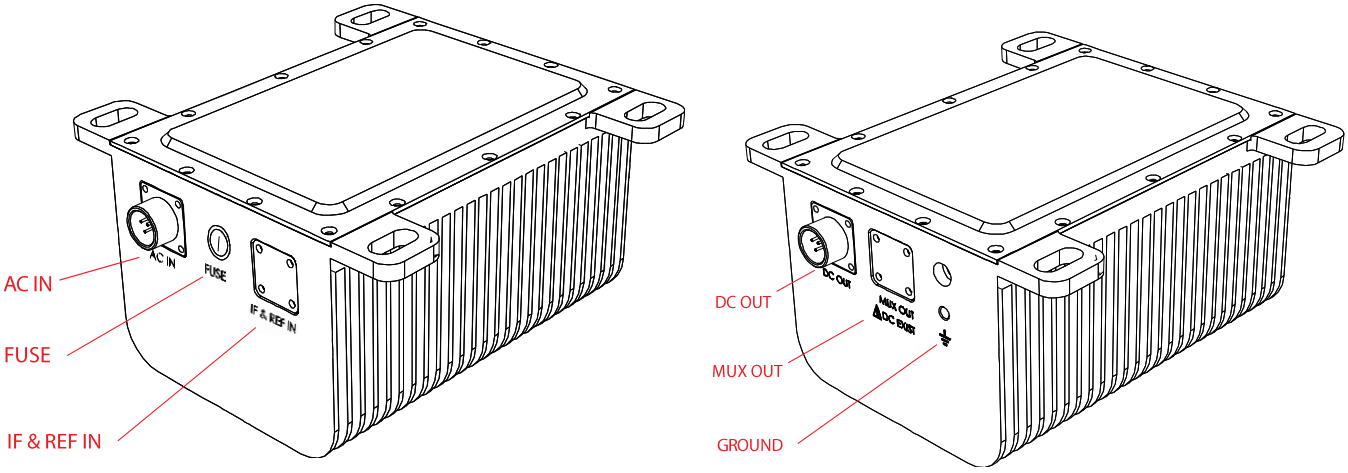


Table 1-15 AMP28 Specificaitions

Parameter	Value	
Product Description	L-band Multiplexer/ PSU, Outdoor	
Model Part Number	AMP28xxx-xxx-x	
Power Rating available	200W to 300W	
AC Input		
AC Input Power	220V (range 90~264VAC)	
Interface	KPT02E12-3P, 3-pin Male	
Pin-out configuration	Pin A	Earth
	Pin B	Live
	Pin C	Neutral
DC Output @ MUX OUT port		
DC Output Power	48VDC (range 45.6 to 50.4V)	
Interface	N-type female	
Ripple Peak-to-Peak	480mV	
Rated Output Current	4.2A	
Transmit Specifications		
Input Interface	N-type female	
Output Interface	N-type female	
Impedance	50Ω	
Frequency	950~1750MHz	
Insertion Loss between RF_IN and RF_OUT ports	2dB @ 10Mhz	
	2dB @ 950~1750MHz	
Gain Flatness @ 3400~4800MHz	2dB over 950 ~ 1750Mhz	
Gain Flatness @ 36MHz	1dB over 36Mhz	

Environmental Considerations	
Operating Temperature	-40°C to 60°C
Storage Temperature	-40°C to 85°C
Working Humidity	Up to 100%
Physical Attributes	
Dimensions (including connectors)	190 x 189 x 108 mm
Weight	3kg

1.8 AMP38 C-band Multiplexer/ PSU

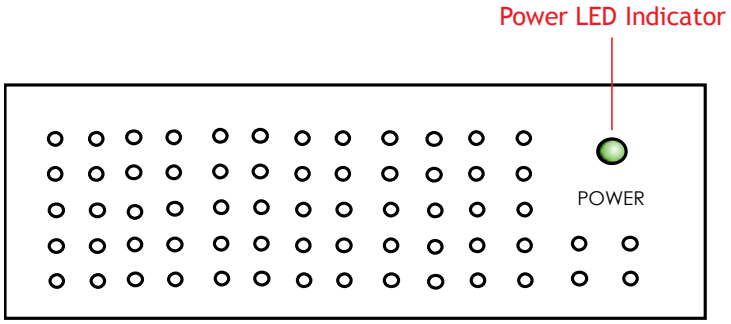


Figure 1.9 Indoor PSU front view

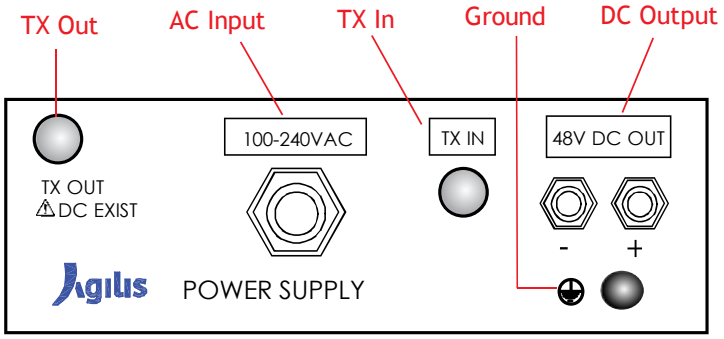


Figure 1.10 Indoor PSU rear view

Table 1-16 AMP38 Specificaitions

Parameter	Value	
Product Description	C-band Multiplexer/PSU, Indoor	
Model Part Number	AMP38xxx-xxx-x	
Power Rating available	120W	
AC Input		
AC Input Power	220VAC (range 90~264V)	
Interface	3-core power cable	
Pin-out configuration	Green/Yellow	Earth
	Brown	Live
	Blue	Neutral
DC Output @ RF OUT port		
DC Output Power	24VDC (range 22~27V)	
Interface	N-type female	
Ripple Peak-to-Peak	240mV	
Rated Power	500mA	

Transmit Specifications	
Input Interface	N-type female
Output Interface	N-type female
Impedance	50Ω
Frequency	3400 to 4800MHz
Insertion Loss between RF_IN and RF_OUT ports	3dB
Gain Flatness @ 3400~4800MHz	1.5dB
Gain Flatness @ 36MHz	0.5dB
LED Indications	
LED is Steady Green	Power is On
LED is off	Power is Off
Environmental Considerations	
Operating Temperature	0°C to 50°C
Storage Temperature	-10°C to 60°C
Working Humidity	Up to 90%
Physical Characteristics	
Dimensions (including connectors)	320 x 140 x 56mm
Weight	1kg

1.9 ALM28 Series L-Band Multiplexer

The following section defines the ALM28 L-band Multiplexer with Auto Detection feature.

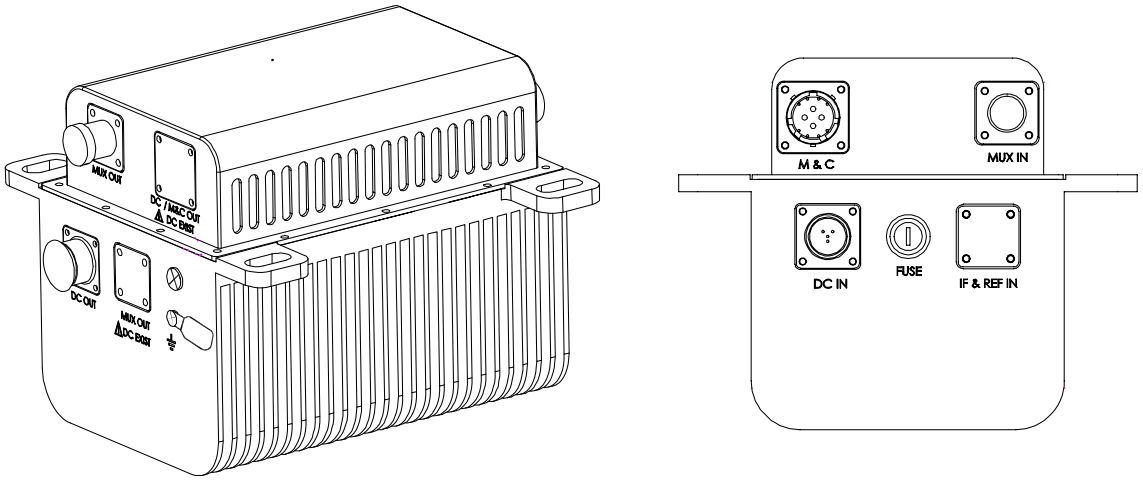


Figure 1.11 ALM28 2eL-band Multiplexer Front and Rear interface

Table 1-17 ALM28 Specificaitions

ALM28 Unit Specifications		
Parameter	Value	
Product Description	L-Band Multiplexer with 10MHz	
Model Part Number	ALM28xxxxx-xx	
DC Supply Port		
Prime Power	±48VDC	
Supply Voltage (V_A-V_B)	48V (range 36~60VDC)	
Interface	62N-12E-12-4P, 4-pin Male	
Pin-out configuration	Pin A	+ Positive
	Pin B	- Negative
	Pin C	NC
	Pin D	NC
DC Output Port		
Interface	PT02E-12-4S 4-pin Female	
Pin-out configuration	Pin A with respect to Pin B	+48VDC
	Pin B	Negative
	Pin C	NC
	Pin D	NC
Voltage	48VDC (range 45.6 ~ 50.4V)	
Ripple Peak-to-Peak	240mV	
Rated Output Current	7.3A	

MUX IN Port		
Interface		50 ohm N-type Female
Frequency		10MHz
10MHz Power Level for External Reference		-9dBm min
Phase Noise	Frequency offset 1 Hz	-85 dBc/Hz
	Frequency offset 10Hz	-115 dBc/Hz
	Frequency offset 1 Hz	-140 dBc/Hz
	Frequency offset 1 Hz	-150 dBc/Hz
	Frequency offset 1 Hz	-155 dBc/Hz
L-band Input Frequency		950 to 1750 Mhz
MUX OUT Port		
Interface		50-ohm N-type female
VSWR		1.5: 1
10MHz Power Level @ "MUX OUT" Port		-5dBm to 8dBm
Internal Reference Output level	10MHz Input @ "MUX IN" Port -11dBm	8dBm max
External Reference Output level	10MHz Input @ MUX IN" port -9dBm	-5dBm min
L-band Output Frequency @ "MUX OUT" Port		950 to 1750 MHz
Insertion Loss		3dB
Full Band Gain Flatness		2db
Full-band Spurious (Span 800MHz)		-55dBc
In-band Spurious (Span 40MHz)		-55dBc
Environmental Specifications		
Operating Temperature		-40°C to 60°C
Storage Temperature		-40°C to 85°C
Working Humidity		Up to 100% RH
Mechanical Specifications		
Dimensions		112(L) x 105(W) x 128.90(H) mm
Weight		3kg

Chapter 2 Cable Connections

The Agilis Power Supply Unit (PSU) can be deployed in indoor or outdoor. This chapter explains the cable connections needed to deploy the APS Series Power Supply Units.

2.1 Cable Connections

The following image shows the cable connections between the Indoor PSU and the BUC using a power supply cable (e.g. P/N: 2502041289).

2.1.1 Indoor PSU Cable Connections

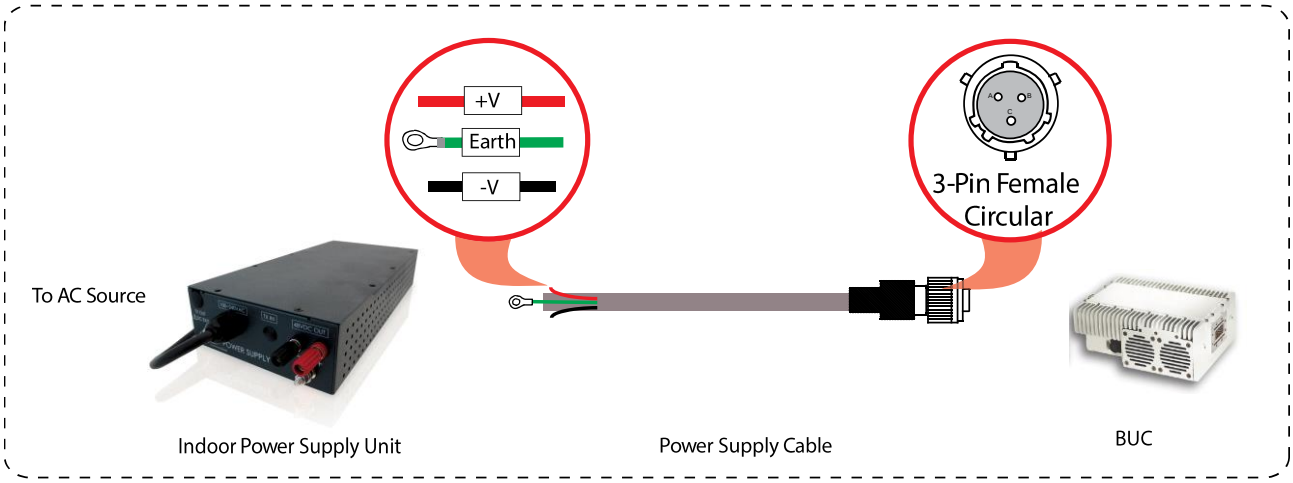


Figure 2.1 Indoor PSU cable connections

2.1.2 Outdoor PSU Cable Connections

The following image shows the cable connections between the Outdoor PSU and the BUC using the power supply cable (e.g. P/N: 2502041185) and the Transient Protection Box (e.g. P/N: 1001520980).

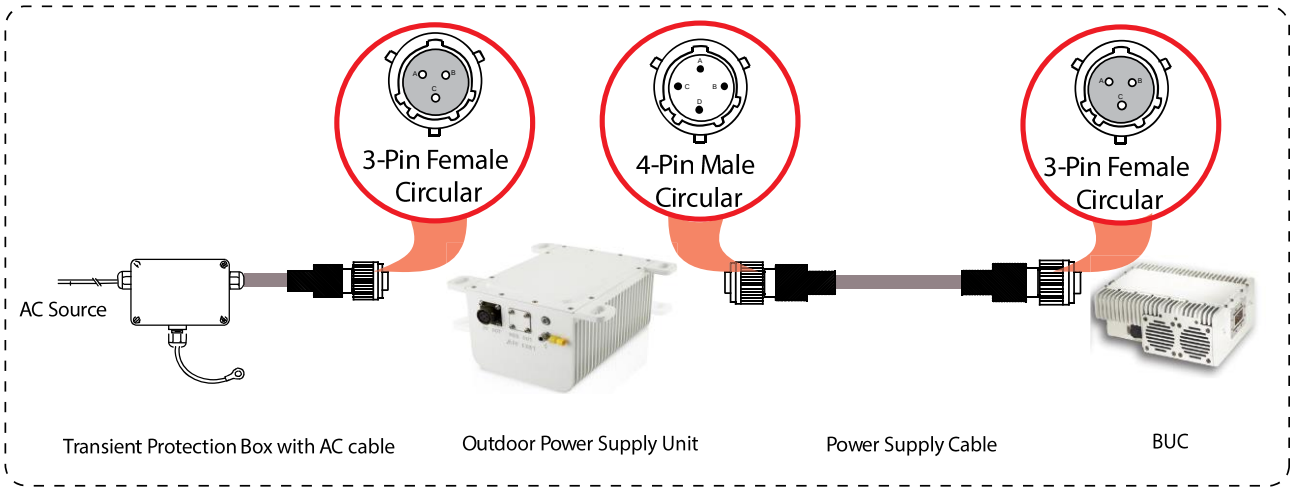


Figure 2.2 Outdoor PSU Cable Connections

2.1.3 Outdoor PSU with Dual Output Cable Connections

The following image shows the cable connections between the Outdoor PSU with Dual Output and an Agilis device such as a Booster. The connection uses the power supply cable (e.g. P/N: 2502041185) and the Transient Protection Box (e.g. P/N: 1001522064).

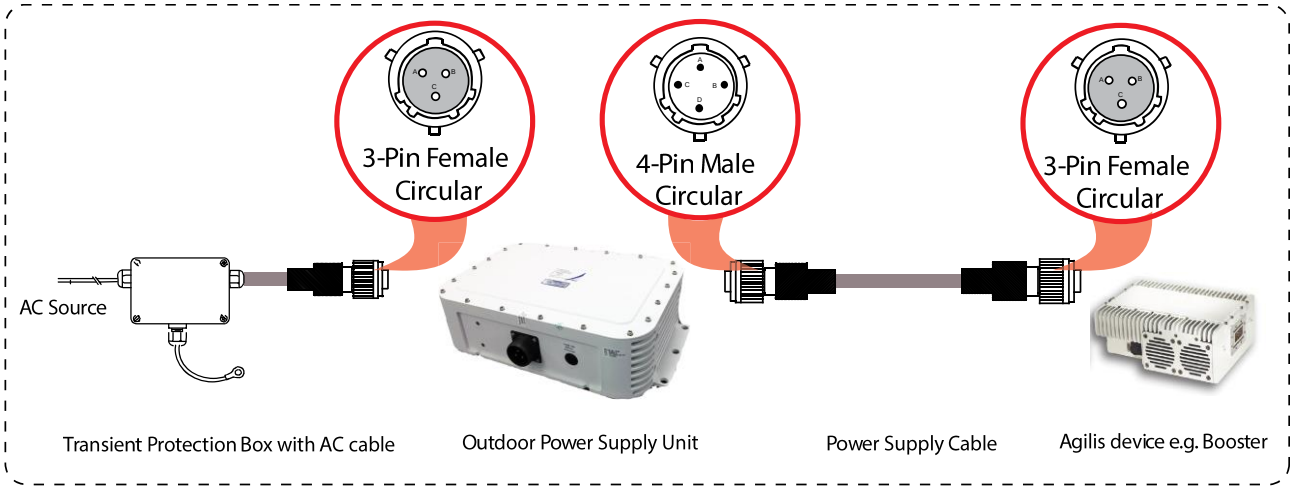


Figure 2.3 Outdoor PSU (Dual Output) Cable Connections

2.1.4 Indoor/ Outdoor PSU Cable Connections (using Y-cable)

The following image shows the cable connections between the Outdoor PSU and an Agilis device such as a BUC. The connection uses the power supply cable that is united to an M&C cable (e.g. P/N: 2502041296) and the Transient Protection Box (e.g. P/N: 1001520980).

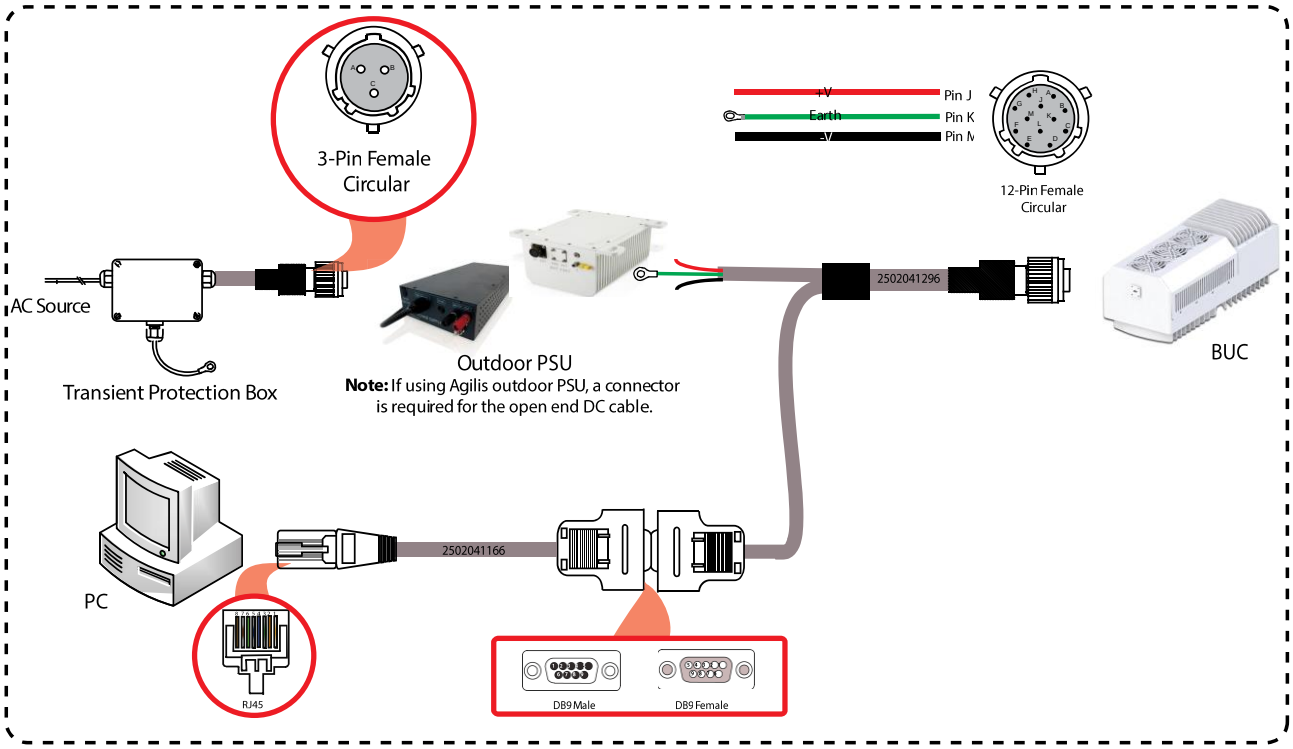


Figure 2.4 Indoor/ Outdoor PSU cable connections using Y-cable

Chapter 3 Installation

This chapter explains a step-by-step process to safely mount and install your Agilis product.

WARNING: Always handle the PSU with care. Dropping or knocking it may cause damage to the unit. Agilis' warranty does not extend to defects due to excessive shock or vibration.

3.1 Installing the Power Supply Units

The following image shows a typical mounting installation of the Outdoor PSU that makes use of the mounting frame (P/N: 4004430053G). Each PSU is secured to the mounting frame using two screws on each side.

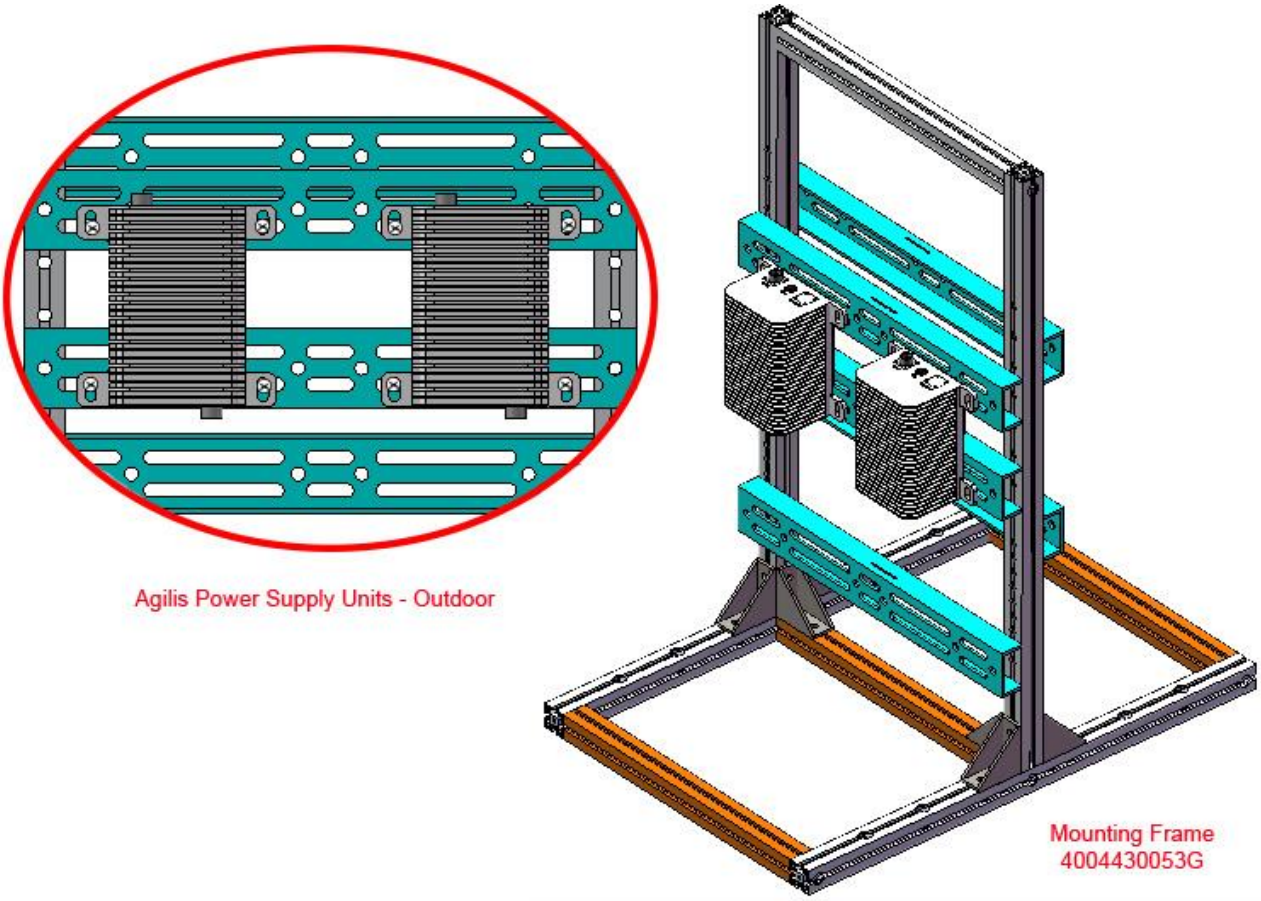


Figure 3.1 Typical Mounting of Outdoor PSU in a Mounting Frame

The following image shows a typical mounting installation of the Outdoor PSU Dual Output using the mounting frame (P/N: 4004430053G). The PSU is secured to the mounting frame using screws tightly installed on each side.

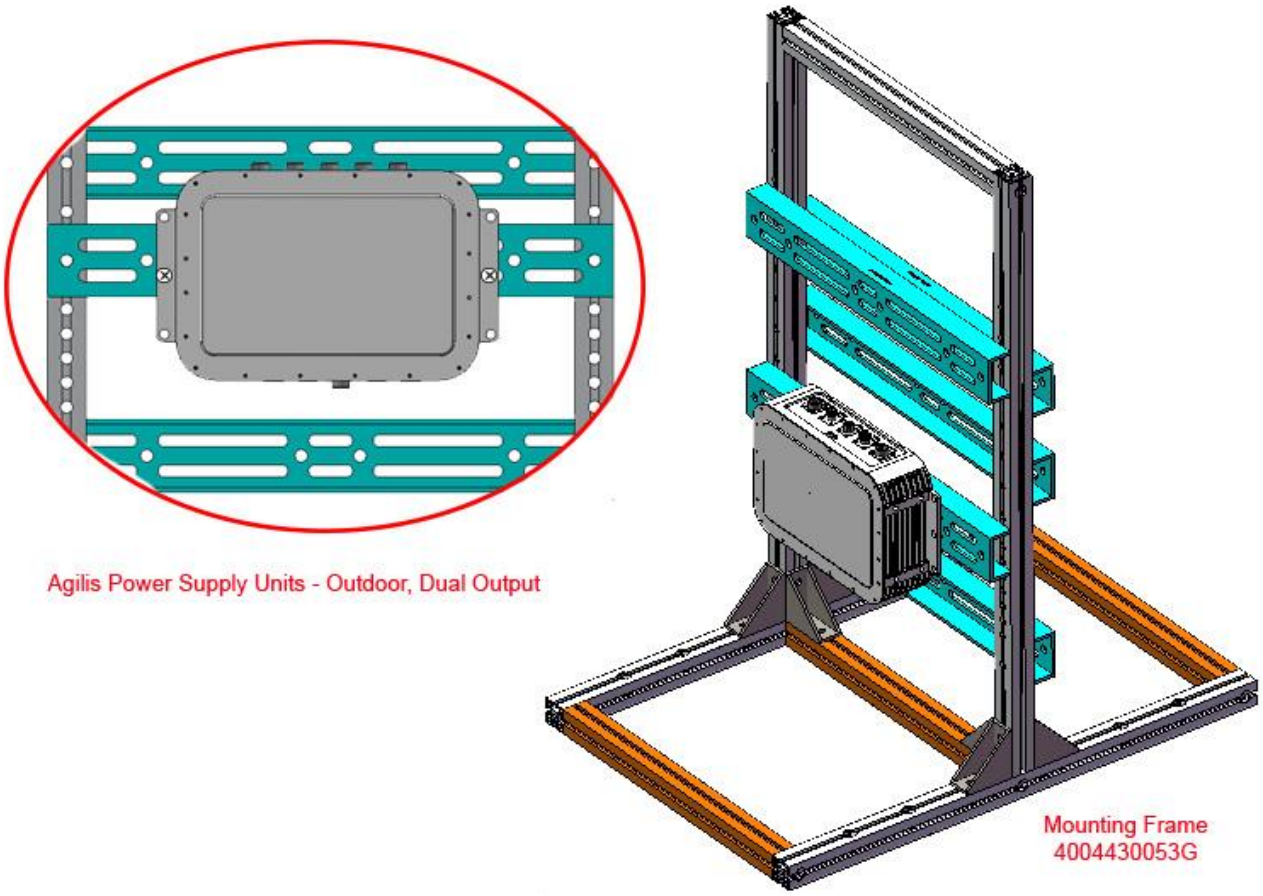


Figure 3.2 Typical Mounting of Outdoor PSU (Dual Output) in a Mounting Frame

Appendix A Customer Service

Agilis provides a variety of after-sales services. This chapter explains some of the services offered including warranty information, the Return Material Authorization process, parts replacement etc.

A.1 Warranty Information

If the unit fails due to defects in materials or workmanship, Agilis will, at its sole discretion, repair or replace the defective parts, free of charge, within two years from the date of its shipment from the Agilis production factory.

Note that shipping cost to Agilis will not be covered under this warranty guarantee.

This warranty will be voided, freeing Agilis from any liability or obligation to the Purchaser with respect to the product in the following situations:

- The product has been damaged during shipment
- Failure caused by products not supplied by Agilis or its authorized contractors and agents.
- Failure caused by operation of the product outside of its published electrical and environmental specifications or any causes other than ordinary use.
- Water ingress due to improper installation.

A.2 Return Material Authorization (RMA)

PRE-RMA CHECKLIST

Shipping the unit to and from your supplier or the factory for repair is a costly and time consuming procedure that may cause disruption in your system for a prolonged period of time. Hence, please inspect your system thoroughly using the checklist below to help us determine if a return shipping is necessary.

Table A-1 Pre-RMA Request Checklist

Please check		
Product model / serial no:		
When did the unit fail:	☐ Initial startup ☐ Unit worked normally before failure	
Initial Fault Symptom:		
Consistent or intermittent fault	☐ Consistent ☐ Intermittent	
Duration of operation before the failure		
Are fans working normally?	☐ Yes ☐ No	
Is the airflow path blocked?	☐ Yes ☐ No	
10 MHz Ref. level at failure		
IF input level at failure		
Output power at failure		
LED status		
Is the device and setup properly grounded?	☐ Yes ☐ No	
Weather conditions just before failure	Air Temperature: _____ Heavy rain/snowfall/storms: _____	
AC Potential	Live – Neutral	
	Live – Ground	
	Neutral – Ground	
AC-DC converter working status		
Is the primary power source working and free of power spikes?	☐ Yes ☐ No	
Was there any recent power outages that affected the device?	☐ Yes ☐ No	
Are connectors properly sealed and free from debris/water?	☐ Yes ☐ No	

Please check	
Replace the device with a working one (if available) and check if the system works.	☐ Works with the new device ☐ Does not work with the new device
Detail the diagnosis performed that localized the fault to the unit as the point of failure	

If you need to return the devices or any components to Agilis for repair, please contact Agilis to obtain a Return Material Authorization (RMA) number by filling in our RMA Request form. You can obtain this form via our website at www.agilissatcom.com. Once you receive a RMA number, carefully repack the unit and attach this number to the unit to be shipped to Agilis.

Agilis provides repair services for products under or out of warranty.

A.3 Additional Technical Support

If you require further technical support, please contact Agilis using the contact information below:

Address:	ST Electronics (Satcom & Sensor Systems) Pte Ltd. 6 Ang Mo Kio Electronics Park Road Singapore 567711
Service Hotline:	(+65) 6521 7959
Fax:	(+65) 6521 7333
Email:	techsvc_satcoms@stee.stengg.com

You can also visit www.agilissatcom.com for the addresses and contact information of our regional service centres.

Appendix B Mechanical Outlines

B.1 Outline Drawings

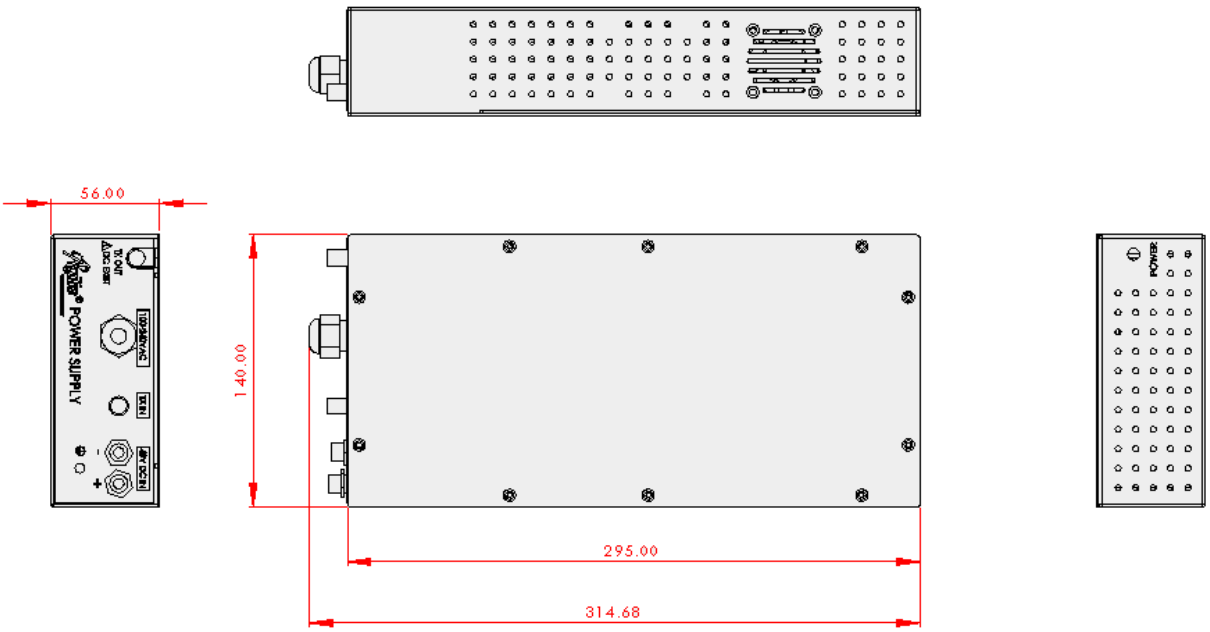


Figure 3.3 Outline Drawing of Indoor APS/AMP Power Supply Unit

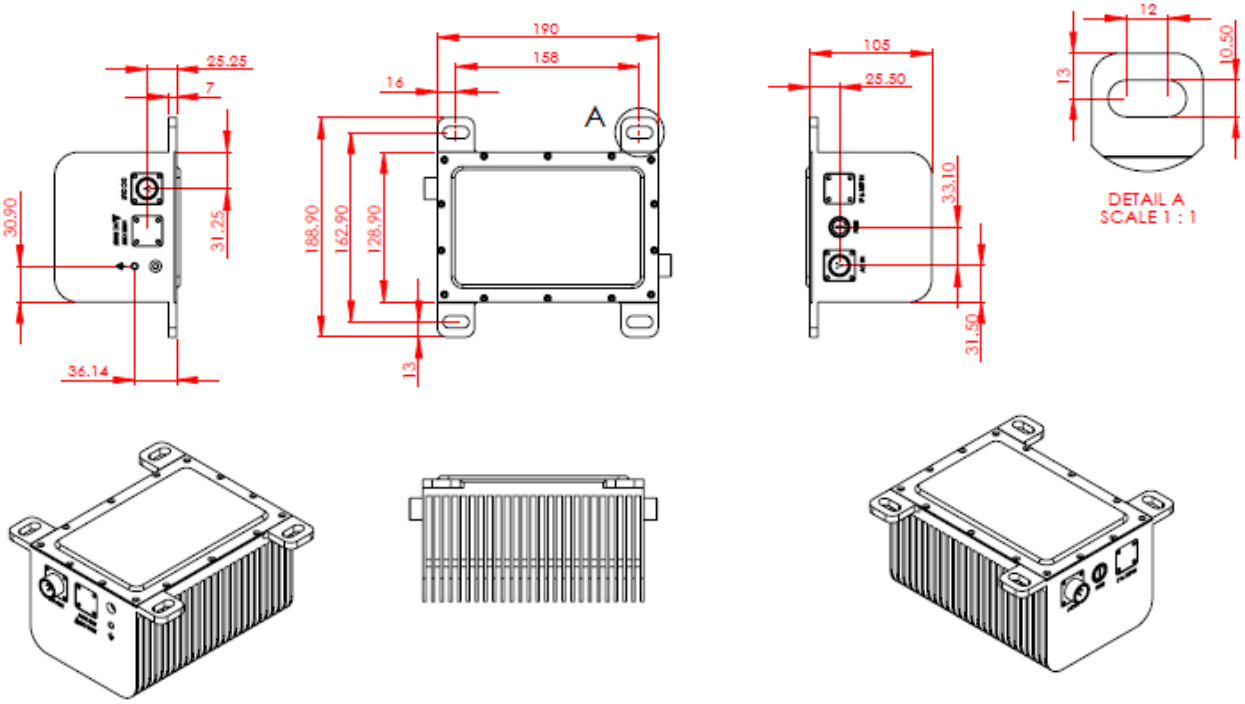


Figure 3.4 Outline Drawing of Outdoor APS/AMP Power Supply Unit

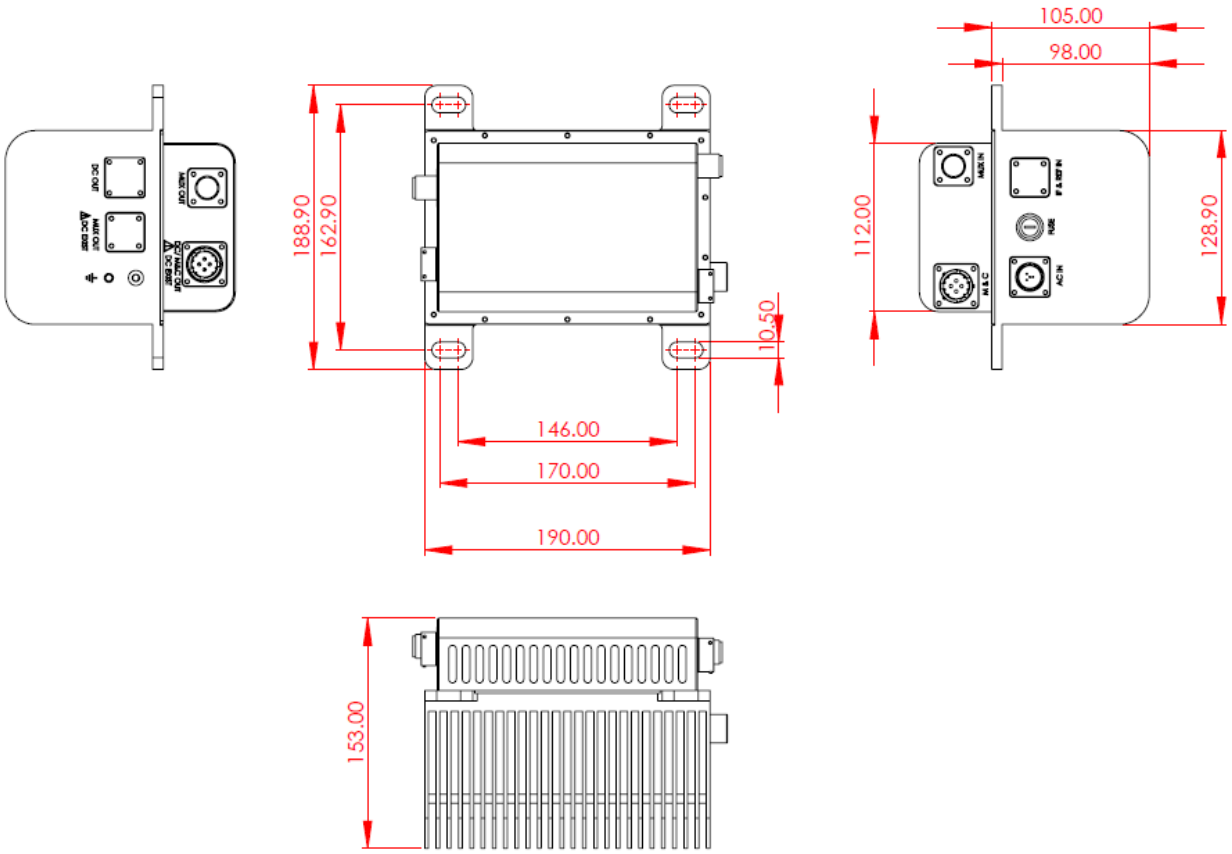


Figure 3.5 Outline Drawing of Outdoor AMP Multiplexer

Appendix C Compliance Standard

IEC 609501-2nd Edition	International Safety Standard for Information Technology Equipment
ETSI EN 301 489-12	Electromagnetic Compatibility and Radio Spectrum Matters (ERM); ElectroMagnetic Compatibility Standard for Radio Equipment and Services; Part 12: Special conditions for Very Small Aperture Terminal, Satellite Interactive Earth Stations operated in the frequency ranges between 4GHz and 30GHz in the Fixed Satellite Service (FSS).
FCC Class A	Two levels of radiation and conducted emissions Limits for unintentional radiators (FCC Mark).

Appendix D Document Revision Log

Revision	Date	Description
A	June 2014	Initial Release